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## COMMENT ON WILLIAMS AND FARMER'S EVALUATION OF DAYTIME RUNNING LIGHTS

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In 'Comments on Theeuwes and Riemersma's Revisit of Daytime Running Lights' Williams and Farmer (1996) comment on a paper we published in *Accident Analysis and Prevention*. In this paper we show that the original claim by Andersson and Nilsson (1981) that the nationwide implementation of Daytime Running Lights (DRL) in Sweden resulted in a reduction of multiple daytime accidents was not warranted. We showed that when the correct statistical procedures are applied, the data show no effect of DRL. Without commenting or doubting any of our statistical procedures, Williams and Farmer come to the conclusion that the implications of our study 'DRLs are ineffective in reducing crashes' is not warranted.

This conclusion by Williams and Farmer is unexpected. Even though the most detailed and comprehensive study on DRL shows no effect, Williams and Farmer want to believe otherwise. The Swedish study is considered the most comprehensive study in the world since it is the only study that provides accident data of two years before and two years after the nationwide mandatory implementation of DRL. When these data were analyzed appropriately, we showed that there was no effect of DRL.

Williams and Farmer come up with a whole set of different arguments why—in spite of the fact that there was no effect in Sweden—we have to believe that DRLs are effective. First, there is supposedly a theoretical basis for a positive effect of DRL. After conducting an extensive literature review (Theeuwes and Riemersma 1990), we concluded that there was no theoretical basis for an effect of DRL during normal daylight condition. Obviously, in dusk (ambient luminance level of 1000 lux or less), DRL, as any

other standard headlamp (250–300 cd), may increase the central and peripheral conspicuity of vehicles. Yet, in dusk, also without a DRL law, most drivers switch on their regular headlamps anyway. Therefore, the increase in conspicuity in dusk should not be attributed to DRL.

Second, Williams and Farmer point out that all other published studies have shown positive effects of DRL. There are several problems with this argument. Most studies showing positive effects are fleet studies. As we pointed out (Theeuwes and Riemersma 1995) there are several methodological reasons to expect positive effects of any measure when applying these to specific fleets. Also, all studies showing positive effects are studies in which a particular set of vehicles have DRL (e.g. fleets or newly sold vehicles as in Canada) while another group does not. If one particular group has lights while another group does not have lights, the group of vehicles with lights may be more conspicuous than the group without. Yet, when all vehicles have lights (as in Sweden) none of the vehicles will stand out from the rest possibly rendering DRL ineffective. Note however that—by the very same argument—due to DRL measures, road users that do not have lights (like pedestrians or bikers) may become less conspicuous; a possible negative effect of DRL that has not been recognized.

Finally, Williams and Farmer argue that there were classification problems with Swedish data. They claim that the instability of the odds ratio (which should show selective effects due to DRL) when calculated for each year (see Fig. 1) is due to the fact that twilight crashes were included in the nighttime group. Although we do not see how this can affect the stability of the odds ratio, the argument is also simply not true. When we calculated the odds ratio for each year, we used the monthly data provided by Anderson and Nilsson on their pp. 16 and 17. As Andersson and Nilsson state on p. 12, line 22–24:

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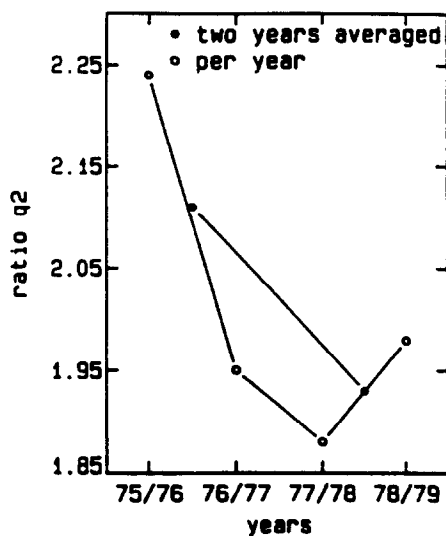


Fig. 1. The odds ratio indicating selective effects of DRL is instable over the two years before and two years after DRL implementation (after Theeuwes and Riemersma 1995).

'Accidents in twilight or when the light conditions are unknown, are not included in the analysis which is based on monthly results'. So the data are in fact

analyzed exactly the same as in the Canadian study cited by Williams and Farmer.

To sum up, the arguments provided by Williams and Farmer are incorrect and cannot be substantiated by scientific arguments. Unfortunately, DRL remains a matter of belief. And, as Williams and Farmer point out at the end of their paper: one should believe in DRL because it is relatively cheap.

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